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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/628,922	07/31/2000	Manfred Hahl	4648 US	5000

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01/24/2003

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EXAMINER

NGUYEN, JENNIFER T

ART UNIT

PAPER NUMBER

2674

DATE MAILED: 01/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/628,922

Applicant(s)

HAHL, MANFRED

Examiner

Jennifer T Nguyen

Art Unit

2674

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 July 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10-14, 16 and 17 is/are rejected.
- 7) ☒ Claim(s) 9 and 15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. This office action is responsive to amendment filed on 11/19/2002.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-8, 10, 13, 14, 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deter (U.S. Patent No. 5,864,432) in view of Sakuma et al. (U.S. Patent No. 6,292,305).

Regarding claim 1, referring to Figs. 1, 3 and 5, Deter teaches a color head-up display, in particular for vehicles, in which the light from a light source (13) is transmitted through an at least partially light transmitting display (6) and is projectable onto a windshield (9), wherein a multiplicity of red, blue and green light emitting diode are arranged without packing on a common support (from col. 11, line 37 to col. 12, line 36).

Deter differs from claim 1 in that he does not specifically teach a heat-dissipating device for cooling the light-emitting diode. However, referring to Fig. 16, Sakuma teaches a heat-dissipating device (142) for cooling the light-emitting diode (141) (col. 7, lines 36-44, col. 22, lines 39-55). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the heat-dissipating device for cooling the light-emitting diode as taught by Sakuma in the system of Deter in order to protect the light emitting diodes.

Regarding claims 2 and 3, referring to Fig. 5, Deter further teaches multiplicity of light emitting diodes is arranged in the form of a compact array in that the compact array is configured in the form of a matrix (col. 12, lines 4-23).

— Regarding claim 4, the combination of Deter and Sakuma differ from claim 4 in that it does not specifically teach the number of light emitting diodes of one color is adapted to the spectral sensitivity of the eye and to the spectral efficiency of the diodes. However, it would have been obvious to obtain the number of light emitting diodes of one color is adapted to the spectral sensitivity of the eye and to the spectral efficiency of the diodes in order to avoid the harmfulness of eyes for observers.

— Regarding claim 5, the combination of Deter and Sakuma differ from claim 5 in that it does not specifically teach the compact array has a large round form. However, it would have been obvious to obtain the compact array has a large round form in order to provide a simple manner in the bonding of the individual diodes and obtain the most utilized luminous intensity of the light emitting diodes when the light is transmitted through a lens optical arrangement, by this way, the material and energy are saved.

✓ Regarding claims 6 and 7, it would have been obvious to obtain the individual light emitting diodes are chip pads fitted on a metallic support material array and in each case at least one bonding wire is connected to said chip pad and to the support material array in order to simplify the circuitry, reduce the size, weight and cost.

— Regarding claim 8, it would have been obvious to obtain a plurality of said light emitting diodes are connected in series and a plurality of light-emitting diodes of one color are connected in series in order to eliminate the external connections.

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Regarding claim 10, Deter further teaches the color head-up display wherein the at least partially light-transmitting display (6) is a liquid crystal display (col. 11, lines 40-41).

Regarding claim 13, Deter further teaches the color head-up display wherein a condenser lens (5) is arranged between the light source (13) and the display (6) (Fig. 3, col. 9, lines 63-66).

Regarding claim 14, Deter further teaches the color head-up display wherein light from the light emitting diode (13) is reflected by one or a plurality of mirrors (5, 8) and is transmitted through the display (6) (from col. 11, line 37 to col. 12, line 36).

Regarding claim 16, the combination of Deter and Sakuma differs from claim 16 in that it does not specifically teach a thermally conductive electronically insulating layer. However, it would have been obvious to obtain a thermally conductive electronically insulating layer in order to protect light emitting diodes from damage causing by temperature.

Regarding claim 17, the combination of Deter and Sakuma teaches the light emitting diodes are arranged in rows and columns on said support (col. 12, lines 4-23 of Deter).

4. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deter (U.S. Patent No. 5,864,432) in view of Sakuma et al. (U.S. Patent No. 6,292,305) and further in view of Asakawa et al. (U.S. Patent No. 5,892,598).

Regarding claim 11, the combination of Deter and Sakuma differs from claim 11 in that it does not specifically teach the display is a color liquid crystal display. However, Asakawa teaches the display is a color liquid crystal display (col. 13, lines 10-15 of Asakawa). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the display is a color liquid crystal display as taught by Asakawa in the system of the combination of Deter and Sakuma in order to enables a simple color representation.

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Regarding claim 12, The combination of deter, Sakuma and Asakawa teaches the liquid crystal display is a monochrome liquid crystal display and wherein the individual color of the light emitting diodes can be successively switched on and off in a rapid sequence (Figs. 22 and 23 of Asakawa, col. 15, lines 2-6).

5. Claims 9 and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. Applicant's arguments with respect to claims 1-15 have been considered but are moot in view of the new ground(s) of rejection.

7. The prior art made of record and not relied upon is considered to pertinent applicant's disclosure.

Stringfellow (U.S. Patent No. 6,359,737) teaches combined head-up display.

Tokito et al. (U.S. Patent No. 6,259,423) teaches display device using organic electroluminescent element.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Jennifer T. Nguyen** whose telephone number is **703-305-3225**. The examiner can normally be reached on Mon-Fri from 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Richard A Hjerpe** can be reach at **703-305-4709**.

Any response to this action should be mailed to:

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Commissioner of Patents and Trademarks

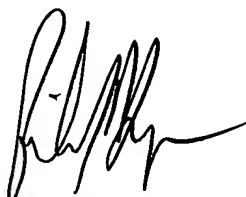
Washington, DC. 20231

Or faxed to: 703-872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, sixth-floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is 703-306-0377.

Jennifer T. Nguyen
Patent Examiner
Art Unit 2674



RICHARD M. HERTZ
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